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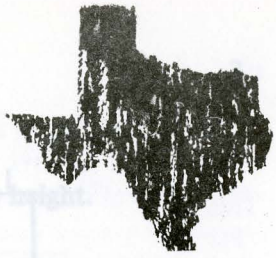

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SCHOOL OF FORESTRY

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CUBIC-FOOT YIELDS FOR UNTHINNED OLD-FIELD LOBLOLLY PINE PLANTATIONS IN THE INTERIOR WEST GULF COASTAL PLAIN

J. David Lenhart [1]

Prior to 1956 few loblolly pine *(Pinus taeda* L.) plantations existed in the Interior West Gulf Coastal Plain. Since 1956, however, industrial and non-industrial forest landowners have been establishing loblolly pine plantations at an ever increasing rate. As the trees in these plantations become of merchantable size, management decisions must be made on when to harvest. To assist the plantation owner in this decision-making process, information on the yields expected from a plantation is necessary. This paper presents detailed schedules of cubic-foot yields applicable to unthinned old-field loblolly pine plantations in this region.

PLANTATION MEASUREMENTS

During the summer and fall of 1970, temporary sample plots were located and measured in 219 old-field loblolly pine plantations throughout the Interior West Gulf Coastal Plain (Fig. 1).

All plantations sampled were unthinned and at least nine years old, and, also were:

1. Unpruned.
2. Undamaged by fire, disease, or insects.
3. Relatively free of wildlings.

In each plantation sampled, a plot containing 64 original planting locations was established in a part of the plantation in which the trees were uniformly distributed.

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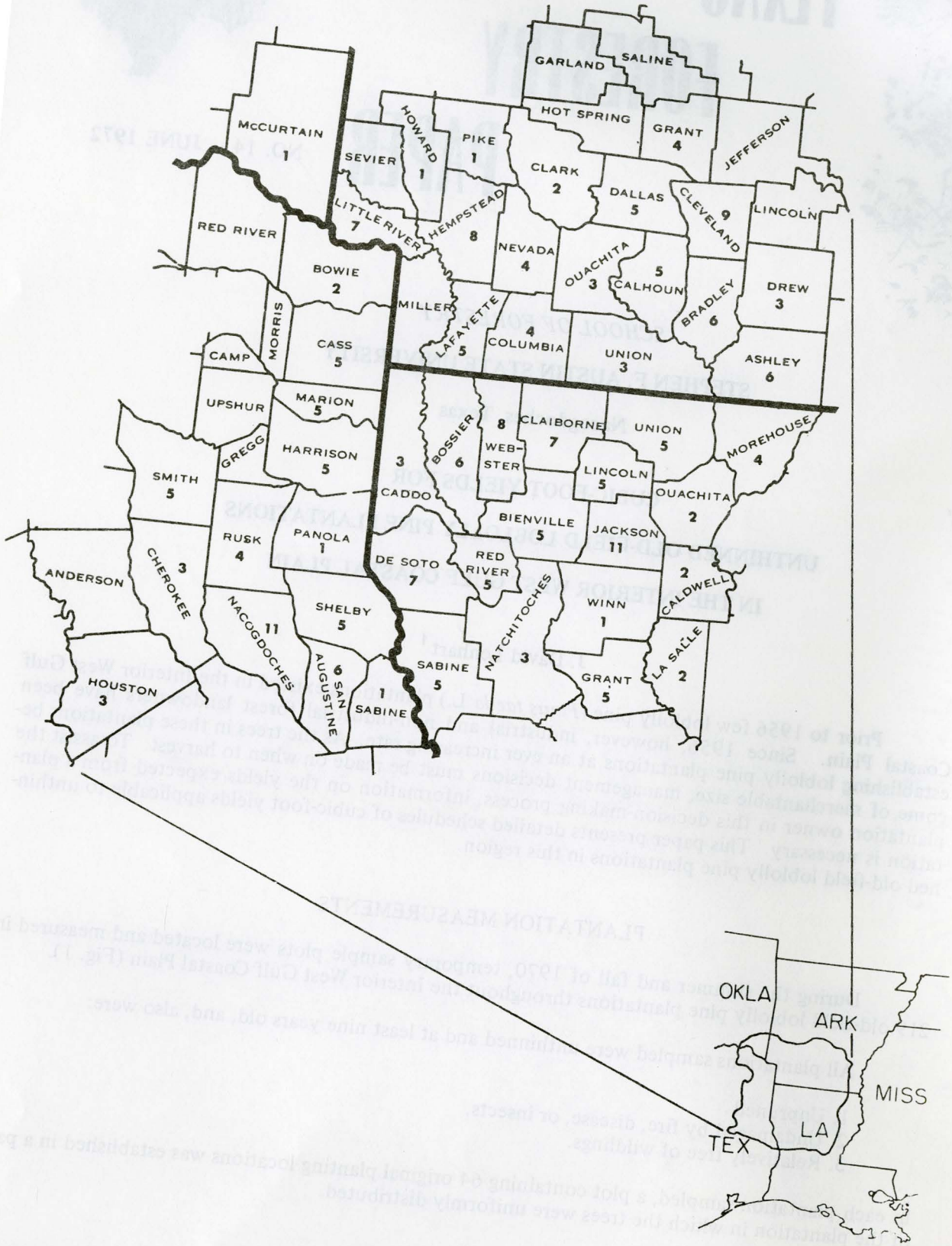

Figure 1. Distribution of sample plots by Counties within the Interior West Gulf Coastal Plain.

On each of the 219 sample plots, the following data were obtained:

1. Age of the plantation, as determined from increment borings at stump height.
2. Plot dimensions and original tree spacing.
3. Number of trees by 1-inch diameter classes.
4. Total height, diameter to nearest tenth-inch, and crown class were determined for the first, and then for every eighth sample tree observed in each diameter class.

For each plot, the average total height of the dominant and codominant trees was calculated. Using this height value and plantation age, site index was computed using a site index prediction equation developed by Lenhart (1971). The number of trees per plot was expanded to give the number of trees per acre. Distribution of the sample plots by age, site index, and number of trees per acre is shown in Table 1.

DIAMETER DISTRIBUTIONS

Procedures developed by Clutter and Bennett (1965) and modified by McGee and Della-Bianca (1967) and Lenhart and Clutter (1971) for determining expected number of trees by diameter classes were used. To obtain the frequencies, it is first necessary to determine the proportion of basal area per acre for 1-inch diameter classes by integrating the following probability distribution function:

$$(1)\quad f(D_i) = \frac{\Gamma(\alpha+\beta+2)}{(Dmax-Dmin)\Gamma(\alpha+1)\Gamma(\beta+1)} \left|\frac{D_i-Dmin}{Dmax-Dmin}\right|^{\alpha} \left|1-\frac{D_i-Dmin}{Dmax-Dmin}\right|^{\beta}$$

Where

$f(D_i)$ = Ordinate of the function for diameter, D_i,

Dmin = Minimum diameter of trees in plantation,

Dmax = Maximum diameter of trees in plantation, and

α and β = Parameters defining the shape of the function.[1]

These basal area proportions are converted to number of trees per acre by diameter classes by the relationship:

$$(2)\quad t_i = T\,[(P_i/B_i)\,/\textstyle\sum_i(P_i/B_i)]$$

Where

t_i = Number of trees per acre in the "i"th diameter class.

T = Number of trees per acre,

P_i = Proportion of basal area per acre in the "i"th diameter class, and

B_i = Basal area for a tree with diameter equal to the mid-point of the "i"th diameter class.

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[1]The symbol $\Gamma(y)$ denotes the gamma function of y.

Table 1. Number of sample plots by site index, age, and trees per acre classes.

Trees Per Acre	Age	Site Index 40	50	60	70	Total
500	10		2			2
	15		3	5	1	9
	20		1	3		4
	25		1	1	1	3
	30				1	1
	Total		7	9	3	19
600	10		1	1		2
	15	1	1	5		7
	20		1	3		4
	25		1	2		3
	30				2	2
	Total	1	4	11	2	18
700	10	2	4	5		11
	15	1	8	10		20
	20	1	1			2
	25					
	30					
	Total	4	13	15	1	33
800	10	1	2	6	2	11
	15	3	14	10		27
	20	1	1	1		3
	25		1			1
	30			1	1	2
	Total	5	18	18	3	44
900	10	1	8	11	1	21
	15	3	13	7	1	24
	20			1		1
	25					
	30					
	Total	4	21	19	2	46
1000	10	1	5	10	2	18
	15	2	8	4		14
	20					
	25					
	30					
	Total	3	13	14	2	32
1100	10			4	1	5
	15	4	3	4		11
	20					
	25					
	30		1			1
	Total	4	4	8	1	17
1200	10	1	2	1		4
	15	1	3	2		6
	20					
	25					
	30					
	Total	2	5	3		10
TOTAL		23	85	97	14	219

From the actual plantation measurement data for plantation age (A), average total height of the dominant and codominant trees (H_d), and the number of trees per acre (T), regression equations for predicting Dmin, Dmax, α, and β were developed as[2]:

$$(3)\quad Dmin = 8.947 + 1.30608 \text{ Log } (A) - 2.17865 \text{ Log } (T) - \frac{74.18}{H_d}$$

$$R^2 = 0.393 \qquad S_{y.x} = 0.730$$

$$(4)\quad Dmax = 6.79945 + 8.37879 \text{ Log } (H_d) - 3.76513 \text{ Log } (T) - \frac{10.092}{A}$$

$$R^2 = 0.669 \qquad S_{y.x} = 0.772$$

$$(5)\quad \alpha = 0.01872 + \frac{15.076}{A} + \frac{84.831}{H_d}$$

$$R^2 = 0.147 \qquad S_{y.x} = 1.376$$

$$(6)\quad \beta = 1.32312 + \frac{30.627}{H_d} - \frac{387.21}{T}$$

$$R^2 = 0.073 \qquad S_{y.x} = 0.808$$

The expected number of trees per acre by 1-inch diameter classes was calculated for various combinations of plantation age, number of trees per acre, and site index (Table 2). One of the classifications for Table 2 is site index, and since site index is not a predictor in equations (3) through (6), the site index equation developed by Lenhart (1971) was modified to determine H_d as:

$$(7)\quad \text{Log } (H_d) = \text{Log } (S) + 3.72183\,(1/25 - 1/A)$$

Where

S = Site index based on an index age of 25 years.

INDIVIDUAL TOTAL TREE HEIGHTS

A total of 5,349 pairs of total height and diameter values were obtained from sample trees measured on the plots. These data plus concomitant plantation data were used to develop an equation to predict the total height of individual trees as:

$$(8)\quad \text{Log } (H_i) = \text{Log } (H_d) + 0.01965 + (1/D_i - 1/Dmax) - 2.70741 + \frac{3.67005}{A} + 0.57940 \text{ Log } (T)$$

$$R^2 = 0.720 \qquad S_{y.x} = 0.03818$$

Where

H_i = Total height in feet of the "i"th tree.

Schedules of heights by diameter classes for various combinations of age, number of trees per acre, and site index are shown in Table 3.

[2]All logarithms in this paper are to base 10.

CUBIC-FOOT YIELDS

For a given combination of age, site index, and trees per acre, the expected diameter distribution can be determined from equations 1 through 7. Using equation 8, a predicted total height of a tree at the mid-point of each expected diameter class can be calculated. The diameter and height values can be used as predictors in equations developed recently by Hasness and Lenhart (1972) to predict outside and inside-bark cubic-foot volumes of individual trees for the total stem and to merchantable tops of 2.0, 3.0, and 4.0 inches d.o.b. Multiplying the volume of an individual tree by the frequency of its occurrence and summing these values over all diameter classes produces expected yields per acre.

Predicted yields by the various merchantability standards are shown in Tables 4 through 11. To provide information on the distribution of cubic-foot volumes within a plantation, the yields are listed by diameter classes. Some possible applications of these distributions are: 1) calculation of the proportion of volume by diameter classes; 2) determination of the percentage of wood occurring above or below a diameter limit or within diameter limits; and 3) computation of the part of the yield which is in sawtimber size trees.

EVALUATION

As stated previously, the data used to develop the yield prediction system were collected from sample plots located in a part of the plantation in which the trees were uniformly distributed and free from most abnormalities. Even though this selection process probably removed considerable within plot variation resulting in an efficient yield prediction system for these uniform stands, it is important to test the system's applicability to more typical or non-uniform conditions.

To provide this test, a second temporary sample plot was located independently and randomly within each of the same 219 plantations. For each of these plots, observed per-acre cubic-foot yields were calculated using actual measurements of diameters and heights. Values of A, H_d, and T measured on each plot were then inserted into the yield prediction system to give the expected per-acre cubic-foot yields.

The expected yields exceeded the observed yields by six percent on the average. This contrasts with independent tests of diameter distribution yield prediction systems for slash pine *(Pinus elliotti Engelm.)* (Bennett *et al.*, 1970), and a more limited test of a similar yield prediction system for yellow-poplar *(Liriodendron tulipifera L.)*, (Beck and Della-Bianca, 1970), both of which indicated less than one percent average difference between observed and expected yields.

In the present loblolly study, plottings of the yield differences over A, H_d, and T values showed no bias. Interestingly, when Lenhart and Clutter evaluated their cubic-foot yield prediction system for old-field loblolly pine plantations in the Georgia Piedmont, the average difference was five percent over-prediction. The similiarity of these findings may reflect an inherent characteristic of loblolly growing habit.

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Table 2. Estimated number of trees per acre by site index, stand density, age, and diameter classes, for old-field loblolly pine plantations.

Trees Per Acre	Age (Yrs)	1-Inch Diameter Class											
		1	2	3	4	5	6	7	8	9	10	11	12
						Site Index 40							
600	10		10	76	183	218	108	4					
	15			19	90	167	185	119	20				
	20			8	62	136	172	147	71	5			
700	10		23	122	243	236	75						
	15		1	36	133	214	206	103	7				
	20			16	96	180	204	151	52	1			
	25			8	78	163	196	163	83	9			
800	10		41	176	299	237	46						
	15	1	3	59	180	258	217	82	2				
	20			30	134	224	230	147	34				
	25			17	112	205	226	169	68	3			
900	10	3	67	235	346	224	25						
	15		6	88	230	297	219	60					
	20			48	176	267	250	138	21				
1000	10	7	99	297	383	202	12						
	15		12	122	281	330	214	41					
	20		1	71	221	307	263	125	11				
1100	10	13	139	360	410	174	5						
	15		20	161	333	357	203	26					
1200	10	22	185	422	427	143	1						
	15		31	204	383	379	187	16					

Table 2. Estimated number of trees per acre, ... Continued.

Trees Per Acre	Age (Yrs)	1-Inch Diameter Class 1	2	3	4	5	6	7	8	9	10	11	12
						Site Index 50							
500	10			13	67	139	167	103	9				
	15			2	30	84	128	135	97	25			
	20				20	68	110	125	107	61	8		
	25				15	62	102	118	107	73	23		
600	10		1	29	111	193	189	76	1				
	15			6	54	125	167	154	85	9			
	20			2	39	104	148	150	111	45	1		
	25				31	94	138	145	117	64	10		
700	10		3	52	162	241	194	47					
	15			14	84	168	202	162	68	2			
	20			5	63	142	183	169	109	30			
	25			2	52	130	173	167	121	53	3		
800	10		8	83	217	282	185	25					
	15			25	120	211	231	163	49				
	20			11	92	181	215	182	101	17			
	25			5	77	168	205	184	120	40	1		
900	10		15	120	273	313	167	12					
	15			41	159	254	255	158	33				
	20			21	124	221	244	190	90	9			
	25			11	107	206	235	197	115	28			
1000	10		26	163	328	386	143	4					
	15		1	61	201	295	273	149	20				
	20			33	160	261	270	194	78	4			
1100	10		40	211	382	349	117	1					
	15		3	85	245	334	286	135	11				
	20			50	198	299	292	195	65	1			
1200	10	1	59	263	433	354	91						
	15		6	113	291	370	295	120	6				
	20			69	239	337	311	192	52				

Table 2. Estimated number of trees per acre, ... Continued.

Trees Per Acre	Age (Yrs)	1-Inch Diameter Class											
		1	2	3	4	5	6	7	8	9	10	11	12
		Site Index 60											
500	10			5	40	102	150	141	61	1			
	15				19	64	107	125	111	65	8		
	20				13	55	94	113	107	80	36	1	
	25				10	51	89	107	104	83	48	8	
600	10			12	70	150	190	144	34				
	15			2	37	99	145	152	116	48	1		
	20				27	86	129	140	121	76	21		
	25				21	80	122	134	119	84	37	2	
700	10			24	108	200	220	133	15				
	15			6	60	136	181	172	114	31			
	20			2	46	119	163	164	128	68	10		
	25				38	112	155	158	130	81	26		
800	10		1	41	151	248	240	113	5				
	15			12	87	175	214	187	107	18			
	20			5	69	154	195	184	131	58	4		
	25			1	59	145	187	179	137	76	16		
900	10		3	64	198	293	252	90	1				
	15			21	118	215	244	197	96	9			
	20			10	96	190	226	200	131	47	1		
	25			4	84	180	217	197	141	68	9		
1000	10		7	91	248	334	254	66					
	15			34	153	254	271	202	83	4			
	20			17	126	227	254	213	128	36			
1100	10		12	123	299	370	250	46					
	15			49	190	293	295	203	69	1			
	20			28	159	263	280	222	122	26			
1200	10		19	160	351	400	239	31					
	15		1	68	229	331	316	200	55				
	20			41	193	299	304	230	115	18			

Table 2. Estimated number of trees per acre, ... Continued.

Trees Per Acre	Age (Yrs)	1-Inch Diameter Class											
		1	2	3	4	5	6	7	8	9	10	11	12
		Site Index 70											
500	10			2	26	77	127	143	103	21			
	15				13	53	92	114	111	83	33		
	20				9	48	84	103	103	86	54	13	
	25				6	45	81	98	98	84	59	26	1
600	10			6	48	118	170	164	88	6			
	15			1	27	83	128	143	125	78	17		
	20				20	75	116	131	120	89	45	5	
	25				16	71	112	125	116	91	55	15	
700	10			12	76	163	208	174	66	1			
	15			3	45	115	162	167	132	68	7		
	20				36	105	148	155	133	88	34	1	
	25				29	100	143	149	130	93	48	7	
800	10			23	110	208	241	174	44				
	15			6	68	150	195	188	135	55	2		
	20			2	56	136	179	177	142	85	24		
	25				48	131	173	171	141	93	40	3	
900	10		1	37	148	253	268	167	27				
	15			12	94	186	227	205	134	42			
	20			5	79	170	209	197	147	79	15		
1000	10		2	55	189	297	288	154	15				
	15			20	123	223	256	218	129	30			
1100	10		3	77	233	339	303	138	7				
	15			31	155	260	283	228	122	21			

Table 3. Estimated total heights of individual trees, by site index, stand density, age and diameter classes, for old-field loblolly pine plantations.

Trees Per Acre	Age (Yrs)	1-Inch Diameter Class 1	2	3	4	5	6	7	8	9	10	11	12
						Feet							
						Site Index 40							
600	10		14	18	21	23	24	25					
	15			22	26	29	30	32	33				
	20			24	29	32	34	36	37	38			
700	10		14	19	21	23	24						
	15		16	23	26	29	31	32	33				
	20			25	29	32	35	36	38	39			
	25			26	31	35	37	39	41	42			
800	10	7	15	19	22	23	25						
	15		17	23	27	29	31	32	33				
	20			25	30	33	35	37	38				
	25			27	32	35	38	39	41	42			
900	10	7	15	19	22	24	25						
	15		18	23	27	30	31	33					
	20			26	30	33	35	37	38				
1000	10	8	16	20	22	24	25						
	15		18	24	27	30	32	33					
	20		19	26	31	33	36	37	38				
1100	10	8	16	20	22	24	25						
	15		19	24	28	30	32	33					
1200	10	9	16	20	23	24	25						
	15		19	25	28	30	32	33					

Table 3. Estimated total heights, ...Continued.

Trees Per Acre	Age (Yrs)	1-Inch Diameter Class 1	2	3	4	5	6	7	8	9	10	11	12
						Feet							
						Site Index 50							
500	10			22	25	27	29	30	31				
	15			26	31	34	37	39	40	41			
	20				34	38	41	44	45	47	48		
	25				37	41	44	47	49	50	52		
600	10		17	22	26	28	29	31	32				
	15			27	32	35	37	39	40	42			
	20			30	35	39	42	44	46	47	48		
	25				38	42	45	47	49	51	52		
700	10		17	23	26	28	30	31					
	15			28	32	35	38	39	41	42			
	20			30	36	40	42	45	46	47			
	25			32	38	42	46	48	50	51	52		
800	10		18	23	26	28	30	31					
	15			28	33	36	38	40	41				
	20			31	36	40	43	45	46	48			
	25			33	39	43	46	48	50	51	53		
900	10		19	24	27	29	30	31					
	15			29	33	36	38	40	41				
	20			32	37	41	43	45	47	48			
	25			33	39	43	46	49	50	52			
1000	10		19	24	27	29	30	31					
	15		22	29	34	36	39	40	41				
	20			32	37	41	43	45	47	48			
1100	10		20	24	27	29	31	32					
	15		23	30	34	37	39	40	42				
	20			33	38	41	44	46	47	48			
1200	10	11	20	25	28	29	31						
	15		23	30	34	37	39	41	42				
	20			33	38	42	44	46	47				

Table 3. Estimated total heights, ... Continued.

Trees Per Acre	Age (Yrs)	1-Inch Diameter Class											
		1	2	3	4	5	6	7	8	9	10	11	12
		Feet											
		Site Index 60											
500	10			25	29	32	34	36	37	38			
	15				37	41	43	46	47	49	50		
	20				41	46	49	52	54	55	57	58	
	25				43	49	53	56	58	60	61	63	
600	10			26	30	33	35	36	37				
	15			32	37	41	44	46	48	49			
	20				42	46	50	52	54	56	57		
	25				44	50	53	56	58	60	62	63	
700	10			27	31	33	35	36	37				
	15			33	38	42	45	47	48	49			
	20			36	42	47	50	53	55	56	57		
	25				45	50	54	57	59	61	62		
800	10		21	27	31	34	35	37	38				
	15			33	39	42	45	47	48	50			
	20			37	43	48	51	53	55	56	58		
	25			39	46	51	54	57	59	61	62		
900	10		22	28	32	34	36	37	38				
	15			34	39	43	45	47	49	50			
	20			37	44	48	51	53	55	57	58		
	25			40	47	51	55	58	60	61	63		
1000	10		23	28	32	34	36	37					
	15			35	40	43	46	47	49	50			
	20			38	44	48	51	54	55	57			
1100	10		23	29	32	34	36	37					
	15			35	40	43	46	48	49	50			
	20			39	45	49	52	54	56	57			
1200	10		24	29	33	35	36	37					
	15		27	36	41	44	46	48	49				
	20			39	45	49	52	54	56	57			

Table 3 Estimated total heights, ... Continued.

Trees Per Acre	Age (Yrs)	1-Inch Diameter Class										
		1	2	3	4	5	6	7	8	9	10	11	12
		Feet											
		Site Index 70											
500	10			29	34	37	39	41	42	44			
	15				42	47	50	53	55	56	58		
	20				47	53	57	60	62	64	66	67	
	25				50	56	61	64	67	69	71	72	74
600	10			30	35	38	40	42	43	44			
	15			37	43	48	51	53	55	57	58		
	20				48	53	57	60	63	64	66	67	
	25				51	57	62	65	68	70	71	73	
700	10			31	35	38	40	42	43	44			
	15			38	44	48	51	54	56	57	58		
	20				49	54	58	61	63	65	66	68	
	25				52	58	62	66	68	70	72	73	
800	10			32	36	39	41	42	43				
	15			38	45	49	52	54	56	57	58		
	20			42	50	55	59	61	63	65	67		
	25				53	59	63	66	68	70	72	73	
900	10		25	32	36	39	41	42	44				
	15			39	45	49	52	54	56	58			
	20			43	50	55	59	62	64	65	67		
1000	10		26	33	37	39	41	43	44				
	15			40	46	50	53	55	56	58			
1100	10		27	33	37	40	41	43	44				
	15			40	46	50	53	55	57	58			

Table 4. Estimated total yields per acre, including bark, in trees 4.6 d.b.h. and larger, for old-field loblolly pine plantations.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 40							
600	10	561	319	230	12					
	15	1334	302	486	446	100				
	20	1828	269	509	617	397	36			
700	10	505	345	160						
	15	1366	387	558	386	35				
	20	1915	356	620	634	298	7			
	25	2304	351	628	740	513	72			
800	10	448	346	102						
	15	1371	466	588	307	10				
	20	1984	456	699	634	195				
	25	2395	441	743	767	420	24			
900	10	395	340	55						
	15	1379	554	593	232					
	20	2020	544	760	595	121				
1000	10	334	307	27						
	15	1370	615	597	158					
	20	2048	625	821	539	63				
1100	10	275	264	11						
	15	1332	666	566	100					
1200	10	219	217	2						
	15	1291	707	522	62					

Table 4. Estimated total yields per acre, including bark, ... Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 50							
500	10	1064	235	424	363	42				
	15	1979	176	410	613	585	195			
	20	2543	158	389	638	725	543	90		
	25	2941	155	386	642	788	691	279		
600	10	1099	338	480	276	5				
	15	2088	269	535	699	513	72			
	20	2729	248	536	765	768	401	11		
	25	3163	240	534	789	861	618	21		
700	10	1102	422	509	171					
	15	2197	362	664	735	420	16			
	20	2912	347	662	882	754	267			
	25	3400	332	684	928	908	512	36		
800	10	1070	493	486	91					
	15	2287	466	760	758	303				
	20	3041	442	796	949	699	155			
	25	3570	439	810	1022	901	386	12		
900	10	1048	566	438	44					
	15	2338	561	838	735	204				
	20	3164	552	903	991	636	82			
	25	3723	538	929	1117	863	276			
1000	10	997	607	375	15					
	15	2406	669	920	693	124				
	20	3273	652	1022	1012	551	36			
1100	10	952	631	317	4					
	15	2419	757	964	628	70				
	20	3359	747	1105	1039	459	9			
1200	10	886	640	246						
	15	2443	839	994	572	38				
	20	3428	861	1177	1023	367				

Table 4. Estimated total yields per acre, including bark, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 60							
500	10	1585	202	443	592	341	7			
	15	2702	160	396	666	784	603	93		
	20	3419	153	395	679	866	832	478	16	
	25	3913	151	403	691	904	941	681	142	
600	10	1678	306	577	605	190				
	15	2900	247	549	810	837	445	12		
	20	3698	240	553	841	980	805	279		
	25	4213	241	553	865	1034	952	533	35	
700	10	1719	407	669	559	84				
	15	3094	348	700	936	822	288			
	20	3948	338	698	1004	1055	720	133		
	25	4548	338	715	1038	1149	933	375		
800	10	1765	520	729	487	29				
	15	3235	447	828	1018	772	170			
	20	4172	447	851	1126	1080	614	54		
	25	4801	446	863	1176	1210	875	231		
900	10	1795	614	787	388	6				
	15	3370	562	944	1072	707	85			
	20	4361	551	987	1224	1080	506	13		
	25	5071	553	1019	1317	1267	783	132		
1000	10	1778	700	793	285					
	15	3483	664	1071	1099	611	38			
	20	4557	659	1109	1327	1074	388			
1100	10	1754	775	781	198					
	15	3594	783	1166	1128	508	9			
	20	4712	778	1246	1384	1024	280			
1200	10	1741	861	746	134					
	15	3649	884	1249	1111	405				
	20	4830	885	1353	1433	965	194			

Table 4. Estimated total yields per acre, including bark, ... Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet Site Index 70							
500	10	2126	175	428	681	667	175			
	15	3482	151	394	698	915	879	445		
	20	4342	153	409	712	956	1039	828	245	
	25	4890	151	421	721	981	1093	973	525	25
600	10	2281	274	587	800	570	50			
	15	3775	241	559	875	1031	840	229		
	20	4698	239	564	905	1131	1075	690	94	
	25	5362	243	591	934	1179	1201	907	307	
700	10	2381	379	718	849	427	8			
	15	4017	334	707	1041	1108	733	94		
	20	5034	341	732	1088	1253	1079	522	19	
	25	5727	348	755	1130	1321	1227	803	143	
800	10	2482	496	852	849	285				
	15	4236	444	868	1172	1133	592	27		
	20	5347	449	900	1243	1338	1043	374		
	25	6078	463	928	1297	1433	1227	669	61	
900	10	2545	603	948	815	179				
	15	4423	550	1010	1278	1125	460			
	20	5629	562	1051	1406	1407	969	234		
1000	10	2595	708	1019	769	99				
	15	4628	673	1160	1383	1083	329			
1100	10	2634	827	1072	689	46				
	15	4786	784	1283	1447	1042	230			

Table 5. Estimated total yields per acre, excluding bark, in trees 4.6 d.b.h. and larger, for old-field loblolly pine plantations.

Trees Per Acre	Age (Yrs)	Total	By 1-Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 40							
600	10	409	227	173	9					
	15	1034	223	375	355	81				
	20	1446	201	397	495	323	30			
700	10	366	246	120						
	15	1053	286	432	307	28				
	20	1511	267	486	509	243	6			
	25	1833	265	494	596	419	59			
800	10	324	247	77						
	15	1053	344	456	245	8				
	20	1559	343	548	509	159				
	25	1901	334	586	618	343	20			
900	10	286	244	42						
	15	1056	411	460	185					
	20	1580	409	595	478	98				
1000	10	240	220	20						
	15	1046	456	464	126					
	20	1599	470	645	433	51				
1100	10	198	190	8						
	15	1015	494	441	80					
1200	10	158	156	2						
	15	979	524	406	49					

Table 5. Estimated total yields per acre, excluding bark, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 50							
500	10	821	172	327	288	34				
	15	1587	133	323	493	478	160			
	20	2063	121	308	517	594	449	74		
	25	2401	119	308	522	648	572	232		
600	10	842	248	370	220	4				
	15	1665	203	421	563	419	59			
	20	2205	190	425	620	630	331	9		
	25	2573	185	426	641	708	512	101		
700	10	840	310	394	136					
	15	1745	273	524	592	343	13			
	20	2347	266	526	715	619	221			
	25	2759	256	546	755	748	424	30		
800	10	809	362	375	72					
	15	1811	354	599	611	247				
	20	2443	339	633	770	573	128			
	25	2888	339	647	831	741	320	10		
900	10	792	418	339	35					
	15	1847	426	661	593	167				
	20	2538	425	719	804	522	68			
	25	3005	416	742	909	710	228			
1000	10	750	448	290	12					
	15	1896	509	727	559	101				
	20	2619	501	814	821	453	30			
1100	10	715	466	246	3					
	15	1901	576	762	506	57				
	20	2685	575	881	844	377	8			
1200	10	663	472	191						
	15	1918	639	786	462	31				
	20	2735	664	938	831	302				

Table 5. Estimated total yields per acre, excluding bark, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Side Index 60							
500	10	1257	151	347	475	278	6			
	15	2200	123	315	541	644	499	78		
	20	2809	119	317	554	715	691	399	14	
	25	3226	118	325	566	747	782	569	119	
600	10	1321	229	452	485	155				
	15	2352	190	437	658	688	369	10		
	20	3024	186	444	686	808	668	232		
	25	3464	189	445	708	854	792	446	30	
700	10	1346	306	524	448	68				
	15	2502	268	559	761	676	238			
	20	3224	264	560	820	871	598	111		
	25	3731	265	577	850	950	776	313		
800	10	1378	392	572	391	23				
	15	2607	345	660	827	634	141			
	20	3399	349	684	920	891	510	45		
	25	3931	350	696	963	1001	728	193		
900	10	1398	463	618	312	5				
	15	2710	434	753	871	581	71			
	20	3546	430	793	1000	891	421	11		
	25	4146	434	823	1079	1048	652	110		
1000	10	1379	527	623	229					
	15	2794	513	855	893	502	31			
	20	3699	514	891	1085	887	322			
1100	10	1356	584	613	159					
	15	2880	606	931	917	418				
	20	3819	608	1002	1131	845	233			
1200	10	1344	651	586	107					
	15	2919	685	997	904	333				
	20	3910	692	1088	1172	797	161			

Table 5. Estimated total yields per acre, excluding bark, ... Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 70							
500	10	1712	133	338	550	546	145			
	15	2860	117	316	570	755	730	372		
	20	3588	120	330	584	791	865	693	205	
	25	4056	119	341	593	814	912	815	441	21
600	10	1829	209	465	647	467	41			
	15	3093	188	449	715	851	698	192		
	20	3875	188	456	743	937	895	577	79	
	25	4439	192	480	769	978	1002	760	258	
700	10	1901	289	569	686	350	7			
	15	3282	260	568	851	915	609	79		
	20	4144	269	592	894	1038	899	436	16	
	25	4730	275	613	930	1096	1024	672	120	
800	10	1974	379	676	686	233				
	15	3454	347	698	958	936	492	23		
	20	4394	354	729	1020	1109	869	313		
	25	5013	367	753	1068	1189	1024	560	52	
900	10	2017	461	751	658	147				
	15	3598	430	812	1044	929	383			
	20	4617	443	851	1155	1166	807	195		
1000	10	2053	542	808	622	81				
	15	3759	527	934	1131	894	273			
1100	10	2080	635	850	557	38				
	15	3882	614	1033	1183	861	191			

Table 6. Estimated yields per acre, including bark, to 2-inch top d.o.b., in trees 4.6 d.b.h. and larger, for old-field loblolly pine plantations.

Trees Per Acre	Age (Yrs)	Total	By 1-Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 40							
600	10	536	302	222	12					
	15	1297	289	472	437	99				
	20	1790	259	496	607	392	36			
700	10	481	327	154						
	15	1328	371	543	379	35				
	20	1873	343	605	623	295	7			
	25	2259	339	614	728	507	71			
800	10	427	329	98						
	15	1330	447	572	301	10				
	20	1938	440	682	623	193				
	25	2347	426	727	755	415	24			
900	10	377	324	53						
	15	1336	532	577	227					
	20	1969	524	741	585	119				
1000	10	318	292	26						
	15	1327	591	581	155					
	20	1997	603	802	530	62				
1100	10	262	251	11						
	15	1290	639	552	99					
1200	10	209	207	2						
	15	1248	679	508	61					

Table 6. Estimated yields per acre, including bark, to 2-inch top, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 50							
500	10	1034	225	412	355	42				
	15	1945	170	401	603	578	193			
	20	2508	153	381	629	717	539	89		
	25	2906	150	379	634	780	686	277		
600	10	1065	323	466	271	5				
	15	2049	260	523	688	507	71			
	20	2689	240	525	755	760	398	11		
	25	3122	233	524	779	853	613	120		
700	10	1066	404	495	167					
	15	2153	349	649	724	415	16			
	20	2865	336	649	869	746	265			
	25	3354	323	671	916	900	508	36		
800	10	1033	472	472	89					
	15	2239	451	743	746	299				
	20	2989	428	780	936	692	153			
	25	3519	427	795	1009	893	383	12		
900	10	1011	542	426	43					
	15	2289	543	820	724	202				
	20	3110	536	886	977	630	81			
	25	3665	523	911	1102	855	274			
1000	10	961	582	365	14					
	15	2351	647	900	682	122				
	20	3215	633	1006	998	546	36			
1100	10	917	605	308	4					
	15	2363	733	943	618	69				
	20	3298	725	1084	1025	455	9			
1200	10	853	613	240						
	15	2386	812	973	563	38				
	20	3364	836	1155	1009	364				

Table 6. Estimated yields per acre, including bark, to 2-inch top, ... Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 60							
500	10	1552	194	432	582	337	7			
	15	2668	155	388	657	776	599	93		
	20	3384	149	388	671	859	826	475	16	
	25	3877	147	397	683	896	935	678	141	
600	10	1640	294	564	594	188				
	15	2860	240	538	799	829	442	12		
	20	3654	233	543	831	971	799	277		
	25	4173	235	544	856	1026	946	531	35	
700	10	1677	393	652	549	83				
	15	3049	338	687	924	814	286			
	20	3901	330	686	992	1046	715	132		
	25	4500	330	704	1027	1139	927	373		
800	10	1720	501	712	479	28				
	15	3183	434	812	1004	764	169			
	20	4120	435	837	1113	1071	610	54		
	25	4748	435	849	1163	1201	870	230		
900	10	1748	592	768	382	6				
	15	3315	546	926	1058	700	85			
	20	4304	537	970	1210	1071	503	13		
	25	5014	540	1004	1303	1257	779	131		
1000	10	1729	675	774	280					
	15	3424	645	1051	1085	605	38			
	20	4495	642	1091	1312	1065	385			
1100	10	1705	748	762	195					
	15	3530	761	1144	1113	503	9			
	20	4645	759	1225	1368	1015	278			
1200	10	1691	831	729	131					
	15	3584	860	1226	1097	401				
	20	4760	863	1330	1417	957	193			

Table 6. Estimated yields per acre, including bark, to 2-inch top, ... Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 70							
500	10	2093	169	419	671	660	174			
	15	3446	147	387	689	907	873	443		
	20	4306	150	402	704	948	1033	825	244	
	25	4857	148	415	714	975	1087	969	524	25
600	10	2243	266	575	788	564	50			
	15	3735	235	550	865	1022	835	228		
	20	4659	234	556	896	1123	1069	687	94	
	25	5321	238	583	925	1171	1195	903	306	
700	10	2337	367	703	836	423	8			
	15	3971	325	696	1029	1099	728	94		
	20	4986	333	721	1077	1244	1073	519	19	
	25	5681	340	745	1120	1312	1221	800	143	
800	10	2433	480	835	836	282				
	15	4184	433	853	1158	1124	589	27		
	20	5293	439	887	1230	1328	1037	372		
	25	6024	453	915	1285	1423	1221	666	61	
900	10	2491	584	928	802	177				
	15	4365	537	993	1263	1115	457			
	20	5571	549	1036	1392	1397	964	233		
1000	10	2539	686	998	757	98				
	15	4567	656	1142	1368	1074	327			
1100	10	2577	802	1050	679	46				
	15	4719	765	1262	1430	1033	229			

Table 7. Estimated yields per acre, excluding bark, to 2-inch top d.o.b., in trees 4.6 d.b.h. and larger, for old-field loblolly pine plantations.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 40							
600	10	390	214	167	9					
	15	1005	213	364	348	80				
	20	1414	193	387	486	319	29			
700	10	347	231	116						
	15	1022	273	420	301	28				
	20	1476	256	474	500	240	6			
	25	1798	256	483	586	414	59			
800	10	306	232	74						
	15	1020	329	443	240	8				
	20	1521	329	534	501	157				
	25	1863	322	573	608	340	20			
900	10	271	231	40						
	15	1021	393	447	181					
	20	1541	393	581	470	97				
1000	10	227	208	19						
	15	1013	437	452	124					
	20	1557	451	629	426	51				
1100	10	187	179	8						
	15	981	473	429	79					
1200	10	149	147	2						
	15	945	502	395	48					

Table 7. Estimated yields per acre, excluding bark, to 2-inch top, ... Continued.

Trees Per Acre	Age (Yrs)	Total	By 1-Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet Site Index 50							
500	10	797	164	317	282	34				
	15	1560	128	315	486	472	159			
	20	2037	117	302	510	588	446	74		
	25	2373	115	302	515	642	568	231		
600	10	815	237	359	215	4				
	15	1634	196	411	554	414	59			
	20	2174	183	417	612	624	329	9		
	25	2541	180	418	633	702	508	100		
700	10	810	295	382	133					
	15	1711	263	512	583	340	13			
	20	2309	257	515	705	613	219			
	25	2721	248	536	745	741	421	30		
800	10	781	346	364	71					
	15	1773	341	585	602	245				
	20	2403	328	621	759	568	127			
	25	2848	329	635	821	735	318	10		
900	10	762	399	329	34					
	15	1806	411	646	584	165				
	20	2493	412	704	793	517	67			
	25	2961	404	728	898	704	227			
1000	10	721	428	282	11					
	15	1853	492	711	550	100				
	20	2572	486	798	810	448	30			
1100	10	687	445	239	3					
	15	1857	557	745	499	56				
	20	2632	557	863	832	373	7			
1200	10	637	451	186						
	15	1871	617	768	455	31				
	20	2683	644	920	820	299				

Table 7. Estimated yields per acre, excluding bark, to 2-inch top, ... Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 60							
500	10	1230	145	338	467	274	6			
	15	2173	119	309	534	638	496	77		
	20	2780	116	311	547	709	686	397	14	
	25	3197	115	320	559	741	778	566	118	
600	10	1292	221	441	477	153				
	15	2319	184	429	649	681	366	10		
	20	2991	181	436	678	801	664	231		
	25	3432	184	438	701	848	787	444	30	
700	10	1312	294	511	440	67				
	15	2464	260	548	751	669	236			
	20	3186	257	551	810	864	594	110		
	25	3693	258	568	841	942	772	312		
800	10	1342	377	557	385	23				
	15	2566	334	648	816	628	140			
	20	3358	340	673	909	884	507	45		
	25	3888	341	685	953	993	724	192		
900	10	1359	445	603	306	5				
	15	2666	421	739	860	576	70			
	20	3500	419	780	988	884	418	11		
	25	4099	423	810	1068	1040	648	110		
1000	10	1340	507	608	225					
	15	2749	498	840	882	498	31			
	20	3650	501	876	1073	880	320			
1100	10	1317	562	598	157					
	15	2831	589	914	906	414	8			
	20	3767	593	986	1118	839	231			
1200	10	1305	627	572	106					
	15	2866	665	979	892	330				
	20	3852	674	1070	1158	790	160			

Table 7. Estimated yields per acre, excluding bark, to 2-inch top, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet Site Index 70							
500	10	1685	128	331	542	540	144			
	15	2832	114	311	563	749	725	370		
	20	3562	118	325	578	785	861	690	205	
	25	4031	117	337	588	809	907	812	440	21
600	10	1796	202	455	637	461	41			
	15	3061	183	442	707	844	694	191		
	20	3843	184	449	735	930	891	575	79	
	25	4406	188	473	762	972	997	757	257	
700	10	1865	280	556	676	346	7			
	15	3244	254	559	841	907	605	78		
	20	4108	262	584	885	1031	895	435	16	
	25	4693	269	604	922	1089	1019	670	120	
800	10	1936	367	662	676	231				
	15	3411	338	687	947	928	489	22		
	20	4351	346	719	1010	1101	864	311		
	25	4969	359	743	1058	1181	1019	558	51	
900	10	1976	446	736	649	145				
	15	3552	419	799	1033	921	380			
	20	4571	433	839	1143	1158	803	195		
1000	10	2009	524	791	613	81				
	15	3711	514	919	1119	887	272			
1100	10	2034	615	832	549	38				
	15	3829	599	1016	1170	854	190			

Table 8. Estimated yields per acre, including bark, to 3-inch top d.o.b., in tree 4.6 d.b.h. and larger, for old-field loblolly pine plantations.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 40							
600	10	467	257	199	11					
	15	1198	255	434	414	95				
	20	1683	231	461	578	378	35			
700	10	417	278	139						
	15	1218	326	501	358	33				
	20	1756	306	564	594	285	7			
	25	2137	305	574	696	492	70			
800	10	368	279	89						
	15	1215	393	527	285	10				
	20	1810	393	636	595	186				
	25	2213	384	681	722	403	23			
900	10	325	277	48						
	15	1217	470	532	215					
	20	1833	469	691	558	115				
1000	10	273	250	23						
	15	1207	522	538	147					
	20	1854	539	749	506	60				
1100	10	225	215	10						
	15	1168	565	510	93					
1200	10	179	177	2						
	15	1127	600	470	57					

Table 8. Estimated yields per acre, including bark, to 3-inch top, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 50							
500	10	949	196	378	335	40				
	15	1852	152	375	577	560	188			
	20	2417	139	359	605	697	529	88		
	25	2816	138	359	611	761	674	273		
600	10	972	283	428	256	5				
	15	1942	234	489	658	491	70			
	20	2582	219	496	726	740	390	11		
	25	3016	214	497	751	832	603	119		
700	10	967	354	455	158					
	15	2034	315	609	692	403	15			
	20	2743	307	613	837	726	260			
	25	3230	296	637	884	878	499	36		
800	10	932	414	434	84					
	15	2108	407	696	715	290				
	20	2853	391	738	901	673	150			
	25	3381	392	755	974	871	377	12		
900	10	909	477	392	40					
	15	2147	490	769	693	195				
	20	2962	491	837	941	613	80			
	25	3515	481	865	1065	835	269			
1000	10	861	512	336	13					
	15	2204	587	846	653	118				
	20	3055	579	949	961	531	35			
1100	10	819	532	284	3					
	15	2209	664	886	592	67				
	20	3130	664	1026	988	443	9			
1200	10	761	540	221						
	15	2226	736	914	540	36				
	20	3188	768	1093	973	354				

Table 8. Estimated yields per acre, including bark, to 3-inch top, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1-Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 60							
500	10	1461	173	402	554	325	7			
	15	2577	142	367	633	756	588	91		
	20	3297	138	370	650	840	813	470	16	
	25	3792	137	380	664	878	922	671	140	
600	10	1535	263	525	566	181				
	15	2753	220	510	770	808	434	11		
	20	3550	216	518	805	950	787	274		
	25	4069	219	520	831	1005	933	526	35	
700	10	1562	351	608	523	80				
	15	2926	310	651	891	794	280			
	20	3779	306	654	961	1024	704	130		
	25	4380	307	674	998	1117	915	369		
800	10	1597	450	663	457	27				
	15	3049	399	770	969	745	166			
	20	3982	404	799	1078	1048	600	53		
	25	4611	406	813	1130	1177	858	227		
900	10	1619	532	718	364	5				
	15	3167	502	878	1021	683	83			
	20	4153	499	926	1172	1048	495	13		
	25	4862	504	962	1266	1232	768	130		
1000	10	1596	606	723	267					
	15	3264	593	998	1046	590	37			
	20	4332	596	1041	1273	1043	379			
1100	10	1569	671	712	186					
	15	3362	701	1086	1075	491	9			
	20	4471	706	1171	1326	994	274			
1200	10	1555	749	681	125					
	15	3405	792	1163	1059	391				
	20	4574	802	1271	1374	937	190			

Table 8. Estimated yields per acre, including bark, to 3-inch top, ... Continued.

Trees Per Acre	Age (Yrs)	Total	By 1-Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet Site Index 70							
500	10	2000	153	393	643	641	170			
	15	3358	136	369	668	888	859	438		
	20	4221	140	386	686	931	1019	817	242	
	25	4776	139	400	697	958	1075	961	521	25
600	10	2134	241	541	756	547	49			
	15	3629	218	525	838	1000	822	226		
	20	4555	219	533	872	1102	1055	681	93	
	25	5221	223	562	903	1151	1181	896	305	
700	10	2218	334	662	803	411	8			
	15	3849	302	664	998	1075	717	93		
	20	4870	312	693	1049	1222	1060	515	19	
	25	5562	320	717	1093	1290	1207	793	142	
800	10	2302	438	787	803	274				
	15	4047	402	815	1123	1100	580	27		
	20	5160	412	853	1198	1304	1024	369		
	25	5893	427	882	1255	1400	1207	661	61	
900	10	2349	532	875	770	172				
	15	4216	499	949	1225	1092	451			
	20	5420	515	996	1356	1372	951	230		
1000	10	2389	625	940	728	96				
	15	4403	611	1092	1327	1051	322			
1100	10	2419	733	989	652	45				
	15	4545	713	1207	1388	1012	225			

Table 8. Estimated yields per acre, including bark, to 3-inch top, ... Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 70							
500	10	2000	153	393	643	641	170			
	15	3358	136	369	668	888	859	438		
	20	4221	140	386	686	931	1019	817	242	
	25	4776	139	400	697	958	1075	961	521	25
600	10	2134	241	541	756	547	49			
	15	3629	218	525	838	1000	822	226		
	20	4555	219	533	872	1102	1055	681	93	
	25	5221	223	562	903	1151	1181	896	305	
700	10	2218	334	662	803	411	8			
	15	3849	302	664	998	1075	717	93		
	20	4870	312	693	1049	1222	1060	515	19	
	25	5562	320	717	1093	1290	1207	793	142	
800	10	2302	438	787	803	274				
	15	4047	402	815	1123	1100	580	27		
	20	5160	412	853	1198	1304	1024	369		
	25	5893	427	882	1255	1400	1207	661	61	
900	10	2349	532	875	770	172				
	15	4216	499	949	1225	1092	451			
	20	5420	515	996	1356	1372	951	230		
1000	10	2389	625	940	728	96				
	15	4403	611	1092	1327	1051	322			
1100	10	2419	733	989	652	45				
	15	4545	713	1207	1388	1012	225			

Table 9. Estimated yields per acre, excluding bark, to 3-inch top d.o.b., in trees 4.6 d.b.h. and larger, for old-field loblolly pine plantations.

Trees Per Acre	Age (Yrs)	Total	By 1-Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 40							
600	10	333	176	149	8					
	15	923	184	333	329	77				
	20	1329	170	359	463	308	29			
700	10	294	191	103						
	15	933	236	386	284	27				
	20	1378	225	440	475	232	6			
	25	1697	228	450	560	402	57			
800	10	258	191	67						
	15	925	285	406	226	8				
	20	1416	291	496	477	152				
	25	1751	287	535	581	329	19			
900	10	228	192	36						
	15	923	342	410	171					
	20	1428	347	539	448	94				
1000	10	190	173	17						
	15	913	380	416	117					
	20	1440	399	586	406	49				
1100	10	156	149	7						
	15	879	411	394	74					
1200	10	124	123	1						
	15	846	437	363	46					

Table 9. Estimated yields per acre, excluding bark, to 3-inch top, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 60							
500	10	1156	128	313	444	265	6			
	15	2097	108	291	514	621	487	76		
	20	2706	107	296	530	693	675	392	13	
	25	3125	106	305	543	726	767	561	117	
600	10	1205	195	410	453	147				
	15	2231	168	405	625	664	359	10		
	20	2906	167	415	657	784	654	229		
	25	3345	171	419	680	831	776	439	29	
700	10	1218	260	474	419	65				
	15	2363	237	518	724	652	232			
	20	3086	237	525	785	845	585	109		
	25	3593	239	543	817	924	761	309		
800	10	1241	335	517	367	22				
	15	2455	305	613	787	612	138			
	20	3244	314	641	882	865	499	44		
	25	3776	317	655	926	974	714	190		
900	10	1252	395	561	292	4				
	15	2543	385	699	829	561	69			
	20	3375	387	743	957	865	412	11		
	25	3974	393	775	1038	1020	639	109		
1000	10	1231	451	566	214					
	15	2616	455	795	850	485	31			
	20	3514	463	835	1040	861	315			
1100	10	1205	499	557	149					
	15	2690	539	866	874	403	8			
	20	2623	549	941	1084	821	228			
1200	10	1192	559	532	101					
	15	2719	609	927	861	322				
	20	3700	624	1021	1123	774	158			

Table 9. Estimated yields per acre, excluding bark, to 3-inch top, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet– Site Index 70							
500	10	1608	115	310	519	524	140			
	15	2760	105	296	546	733	714	366		
	20	3493	110	312	563	771	850	684	203	
	25	3961	109	324	573	795	897	805	437	21
600	10	1708	182	427	611	448	40			
	15	2972	169	421	685	825	683	189		
	20	3758	171	431	716	913	879	570	78	
	25	4324	176	456	743	956	986	751	256	
700	10	1765	252	522	648	336	7			
	15	3145	234	533	816	888	596	78		
	20	4009	245	560	862	1012	883	431	16	
	25	4598	253	582	900	1071	1008	665	119	
800	10	1826	332	622	648	224				
	15	3298	313	655	918	908	482	22		
	20	4241	324	690	984	1081	853	309		
	25	4862	338	716	1033	1162	1008	554	51	
900	10	1858	403	692	622	141				
	15	3429	388	763	1001	902	375			
	20	4448	405	806	1114	1137	793	193		
1000	10	1884	474	743	589	78				
	15	3576	476	878	1086	868	268			
1100	10	1904	557	782	528	37				
	15	3684	555	971	1135	836	187			

Table 10. Estimated yields per acre, including bark, to 4-inch top d.o.b., in trees 4.6 d.b.h and larger, for old-field loblolly pine plantations.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 40							
600	10	293	141	143	9					
	15	946	167	339	355	85				
	20	1418	160	374	506	345	33			
700	10	252	153	99						
	15	946	214	395	307	30				
	20	1461	212	461	520	261	7			
	25	1834	220	476	618	454	66			
800	10	218	153	65						
	15	928	258	416	245	9				
	20	1489	277	519	523	170				
	25	1879	277	568	640	372	22			
900	10	193	158	35						
	15	920	314	420	186					
	20	1490	330	564	491	105				
1000	10	159	142	17						
	15	905	349	429	127					
	20	1495	379	616	445	55				
1100	10	130	123	7						
	15	866	378	407	81					
1200	10	102	101	1						
	15	826	401	375	50					

Table 10. Estimated yields per acre, including bark, to 4-inch top, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 50							
500	10	734	123	292	283	36				
	15	1626	109	311	512	516	178			
	20	2191	104	304	546	649	503	85		
	25	2593	106	308	556	714	644	265		
600	10	735	182	331	218	4				
	15	1675	169	405	583	452	66			
	20	2314	165	422	655	690	371	11		
	25	2749	166	428	683	780	577	115		
700	10	718	227	356	135					
	15	1735	227	507	614	372	15			
	20	2438	234	522	757	678	247			
	25	2925	229	552	806	825	478	35		
800	10	676	265	339	72					
	15	1782	298	580	636	268				
	20	2515	298	631	815	628	143			
	25	3038	306	654	888	818	360	12		
900	10	653	313	306	34					
	15	1795	358	640	617	180				
	20	2593	377	716	851	573	76			
	25	3139	375	749	973	784	258			
1000	10	609	336	262	11					
	15	1834	434	709	582	109				
	20	2660	445	815	869	497	34			
1100	10	577	349	225	3					
	15	1823	491	743	527	62				
	20	2710	510	882	896	414	8			
1200	10	529	354	175						
	15	1826	544	766	482	34				
	20	2746	594	939	882	331				

Table 10. Estimated yields per acre, including bark, to 4-inch top, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet Site Index 60							
500	10	1235	120	326	485	297	7			
	15	2353	109	314	574	707	561	88		
	20	3080	110	324	597	794	782	457	16	
	25	3581	111	337	615	835	890	655	138	
600	10	1275	185	429	496	165				
	15	2487	169	438	699	756	414	11		
	20	3289	172	455	740	898	757	267		
	25	3813	179	461	770	955	901	513	34	
700	10	1275	247	497	458	73				
	15	2623	240	562	810	743	268			
	20	3479	245	575	886	969	677	127		
	25	4083	250	599	926	1063	884	361		
800	10	1290	321	542	402	25				
	15	2711	309	664	881	698	159			
	20	3646	326	704	994	992	578	52		
	25	4277	332	723	1050	1120	830	222		
900	10	1294	379	590	320	5				
	15	2796	392	757	928	640	79			
	20	3780	402	816	1080	992	477	13		
	25	4491	413	857	1178	1174	742	127		
1000	10	1262	432	595	235					
	15	2868	463	864	952	554	35			
	20	3928	480	918	1175	989	366			
1100	10	1229	479	586	164					
	15	2941	551	941	980	460	9			
	20	4038	572	1035	1225	942	264			
1200	10	1211	541	560	110					
	15	2963	623	1008	965	367				
	20	4114	650	1124	1269	888	183			

Table 10. Estimated yields per acre, including bark, to 4-inch top, ...Continued.

Tree Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet Site Index 70							
500	10	1773	113	330	575	594	161			
	15	3145	109	325	616	841	827	427		
	20	4018	116	346	640	889	988	800	239	
	25	4577	116	361	654	919	1045	944	514	24
600	10	1867	180	456	678	507	46			
	15	3370	176	462	773	947	792	220		
	20	4306	181	478	813	1053	1022	667	92	
	25	4981	188	509	848	1106	1149	880	301	
700	10	1915	249	558	719	381	8			
	15	3550	243	585	921	1020	690	91		
	20	4579	259	622	980	1167	1028	504	19	
	25	5281	270	650	1028	1239	1175	779	140	
800	10	1970	330	667	719	254				
	15	3711	326	721	1037	1043	558	26		
	20	4831	344	768	1119	1246	993	361		
	25	5571	362	801	1180	1344	1175	649	60	
900	10	1993	402	741	690	160				
	15	3844	405	839	1131	1035	434			
	20	5057	430	897	1269	1312	923	226		
1000	10	2011	471	797	654	89				
	15	4000	498	968	1228	996	310			
1100	10	2023	558	838	586	41				
	15	4113	581	1070	1284	961	217			

Table 11. Estimated yields per acre excluding bark, to 4-inch top d.o.b., in trees 4.6 d.b.h. and larger, for old-field loblolly pine plantations.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes							
			5	6	7	8	9	10	11	12
			Cubic Feet Site Index 40							
600	10	187	79	101	7					
	15	711	110	253	279	69				
	20	1104	110	285	402	280	27			
700	10	155	85	70						
	15	703	141	297	241	24				
	20	1130	146	353	413	212	6			
	25	1441	156	367	494	370	54			
800	10	132	86	46						
	15	682	170	313	192	7				
	20	1146	193	398	417	138				
	25	1470	197	440	512	303	18			
900	10	117	92	25						
	15	674	211	316	147					
	20	1138	230	432	391	85				
1000	10	95	83	12						
	15	658	234	324	100					
	20	1137	264	474	354	45				
1100	10	76	71	5						
	15	624	254	307	63					
1200	10	60	59	1						
	15	591	269	283	39					

Table 11. Estimated yields per acre, excluding bark, to 4-inch top, ... Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes						
			5	6	7	8	9	10	11	12
			Cubic Feet– Site Index 50							
500	10	545	78	217	221	29				
	15	1291	76	240	409	420	146			
	20	1770	75	238	440	531	416	70		
	25	2110	78	242	450	586	533	221		
600	10	537	118	245	171	3				
	15	1322	120	313	467	368	54			
	20	1860	121	330	528	565	307	9		
	25	2229	123	338	553	641	478	96		
700	10	519	147	266	106					
	15	1360	161	393	491	303	12			
	20	1951	172	409	611	555	204			
	25	2362	170	436	653	678	396	29		
800	10	481	172	253	56					
	15	1390	213	449	510	218				
	20	2005	219	495	658	514	119			
	25	2445	228	517	719	672	299	10		
900	10	463	207	229	27					
	15	1394	257	496	494	147				
	20	2060	278	562	687	470	63			
	25	2520	280	592	790	644	214			
1000	10	427	222	196	9					
	15	1419	313	551	466	89				
	20	2108	329	642	702	407	28			
100	10	402	231	169	2					
	15	1403	354	577	422	50				
	20	2141	377	694	724	339	7			
200	10	365	234	131						
	15	1401	392	595	387	27				
	20	2164	441	739	713	271				

Table 11. Estimated yields per acre, excluding bark, to 4-inch top, ...Continued.

Trees Per Acre	Age (Yrs)	Total	By 1–Inch Diameter Classes 5	6	7	8	9	10	11	12
			Cubic Feet							
			Site Index 60							
500	10	963	83	249	386	240	5			
	15	1909	81	247	464	579	464	74		
	20	2523	83	257	486	654	649	381	13	
	25	2948	85	269	502	689	740	547	116	
600	10	986	129	329	394	134				
	15	2007	125	345	565	620	343	9		
	20	2686	130	362	602	740	629	223		
	25	3131	137	369	629	789	749	429	29	
700	10	975	172	380	364	59				
	15	2108	178	443	656	610	221			
	20	2834	186	458	722	799	563	106		
	25	3343	191	480	757	878	736	301		
800	10	981	226	415	320	20				
	15	2169	229	524	713	572	131			
	20	2961	248	562	810	818	480	43		
	25	3493	255	579	858	925	690	186		
900	10	980	267	454	255	4				
	15	2232	292	597	751	526	66			
	20	3062	306	651	880	818	396	11		
	25	3661	317	687	963	970	618	106		
1000	10	948	304	457	187					
	15	2282	345	683	770	455	29			
	20	3173	365	731	958	815	304			
1100	10	917	337	450	130					
	15	2335	413	743	794	378	7			
	20	3256	436	826	998	777	219			
1200	10	902	384	430	88					
	15	2346	467	796	782	301				
	20	3312	496	897	1034	733	152			